I believe with Doctor Stolz that "finickiness," and at times real anorexia, are directly due to an overly anxious mother trying to administer her conception of a suitable diet to the child. The experiments of Doctor Davis in Chicago in allowing children to select their own diets are a demonstration of the latitude which should be allowed in variety and quantity of food which may be given a child. A child will not offer resistance to eating, if he is selecting his own diet—a procedure which is entirely reasonable to allow at home, within certain limitations.

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J. R. JIMERSON, M. D. (1723 East Third Street, Long Beach).—In 1927 Aldrich stated that "statistics as to the prevalence of anorexia are few in spite of its widespread occurrence." The author and others are to be congratulated on adding this painstaking statistical study to the already accumulated literature concerning this annoying biological phenomenon. Good, round figures have a tendency to dispel or strengthen, as the case may be, certain impressions concerning our daily problems.

The classification of types is interesting, but I do not feel that it will hold either with a large series of cases or with the opinions of other authors. May I offer, therefore, three excerpts for contrast: 1. The anorexics in our study did show definite nutritional inferiority, but the finicky children did not (author). 2. The table indicates that in the entire group of 199 children there were none seriously underweight because of poor appetite alone (Aldrich). 3. Now anorexia is not an occasional occurrence—the lowest estimate of its incidents in private pediatric practice is 50 per cent—the children are commonly malnourished, either quantitatively or qualitatively, more often both (Brenneman).

My personal reaction toward a case of this nature is a prayer that the unfortunate child be committed to the care of Dr. Clara Davis or the Elysian Fields of Dr. Joe Brenneman, "where sunsets are gorgeous and plainly visible."

A certain successful pediatrician in a neighboring metropolis affords the service of an individual trained in the special field of child and family psychology. The individual's hunter's green uniform, cocked hat, and beaming countenance are sufficient to disarm the most hostile and doubting parent. Esoteric as the results may be, I feel confident that Doctor Stolz is striking at the seat of the problem.

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INA M. RICHTER, M. D. (La Loma Feliz, Santa Barbara).—It is indeed interesting to get data on this important question from a new source. In such a study a much more natural setting is obtained in which to observe the child's habits than obtains when he is referred to the physician's office or out-patient hospital department. Although statistics from the latter sources show a high percentage of the condition, Doctor Stolz's figures confirm the belief that the habit is quite prevalent.

The division into true anorexia and finickiness is helpful in the classification and handling of these children. The finicky eater generally rapidly overcomes his aversion to food when placed in an environment in which he can no longer be the center of attraction. The true anorexic is much more difficult to handle. As stated, this condition is more frequently seen in the undernourished child who develops other faulty habits following some illness. Each instance must then be handled as an individual problem.

I cannot entirely agree with Doctor Stolz that there is no constitutional factor. The child with an inherited nervous instability seems more apt to acquire this condition, and to be more difficult to handle even when removed from his environment. The discrepancy here, however, between Doctor Stolz's figures and those of others may lie in the difference in the sample of children studied.

I await with interest further data as to the length of time the condition persists in his children, and his method of overcoming this habit.

TERMINATION OF PREGNANCY IN ECLAMPSIA*

By DONALD G. TOLLEFSON, M. D.
Los Angeles

DISCUSSION *by Alice F. Maxwell, M. D., San Francisco; Sterling N. Pierce, M. D., Los Angeles; E. M. Lazard, M. D., Los Angeles.*

THE incidence of eclampsia has greatly decreased since the advent of proper prenatal care. Patients with toxemia in the last trimester of pregnancy are being hospitalized and symptoms controlled by conservative measures. The series to be analyzed was taken from the records of the Los Angeles County General, the California, the Cedars of Lebanon, and the Hollywood hospitals from 1926 to 1932, inclusive. All cases have received the usual conservative treatment, including intravenous magnesium sulphate. The disease in most instances has been treated as a medical complication of pregnancy. Authorities agree quite universally that patients with preëclamptic toxemias which do not respond to treatment should have their pregnancies terminated. In a large series of cases, excellent results are reported. The use of cesarean section in eclampsia is generally considered inadvisable while convulsions continue; however, most authors state that occasionally in fulminating cases abdominal section might be considered. High mortality is reported for cesarean section in eclampsia, but little is said of the mortality when delivery is accomplished by vaginal operations. It must also be remembered that section frequently is a final gesture of despair, in the treatment of these acutely ill patients, and is often successful.

WHEN SHOULD DELIVERY BE ATTEMPTED

Many cases of eclampsia are prevented by termination of pregnancy in preëclamptics; yet the use of active operative procedure is said to be contraindicated when convulsions have occurred. When should the delivery be attempted, and what method should be employed?

The following factors, in the order named, are the usual accepted evidence of progress in conservative therapy:

1. Control of convulsions;
2. Return of consciousness;
3. Increase in urinary output;
4. Heart and lung efficiency;
5. Reduction of blood pressure;
6. Decrease in amount of albumin; and
7. Reduction of edema.

The control of convulsions has been greatly facilitated by the use of magnesium sulphate, intravenously. Since 1926 Lazaard, McNeile and others have commented on its use. In this series of 173 cases, convulsions ceased after injections of the drug were started in forty-nine patients. In sixty-five, one convulsion occurred after the medication. In eighty-two, two or more convulsions persisted after the use of this drug. In twenty-nine, the information was not obtainable

* Read before the Obstetrics and Gynecology Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

TABLE 1.—*Incidence of Eclampsia*

	Private	General	Total
Deliveries	14,578	8,915	22,493
Eclampsia	52	173	225
Incidence	0.3%	1.9%	1.0%
Deaths	3	22	25
Mortality	5.8%	12.6%	11.1%
Cesareans	18	28	46

or treatment was insufficient. A conservative estimate would be that in 50 per cent of the patients convulsions were controlled. The prevalent view that the number of convulsions does not always affect the prognosis is substantiated in this study.

Persistent coma seems to be a very dangerous symptom, and when it persists after convulsions are controlled for twenty-four hours, it is even more suggestive of a fatal outcome. Increased urinary output is a most favorable indication. Persistent, rapid pulse and pulmonary edema seemed to forestall induction or termination of labor with great frequency. Reduction of blood pressure was variable both as to prognosis and indication for interruption. Albumin seldom affected the method of treatment. Disappearance of edema was only favorable with increased kidney output.

The period of gestation is often one of the deciding factors for interference. The desire for a living baby sometimes causes great delay in delivery. To delay termination for the life of a probably toxic fetus seems to be extremely dangerous. In ninety-one of this group, the period of gestation in calendar months was eight or less. Eclampsia for this discussion does not include convulsions occurring before six calendar months.

Parity of the patient will affect the method and time of termination in many instances. The induction of labor in a primigravida, with a long, rigid, uneffaced cervix, is indeed a difficult, prolonged and dangerous operation. Even in multiparous patients induction of labor is not always certain. A slow labor and other complications often follow bag inductions, and yet this is a favorite method in many clinics. Some success may be obtained with castor oil, quinin, and intranasal pituitary solution. Rupturing of the membranes may be sufficient in others. Duhrssen's incision and dilatation of the cervix, so often necessary, may turn out to be truly major operations.

ANESTHESIA

Of no less importance is the type of anesthesia employed. Stander has shown that general anesthesia adds considerable toxemia to the already toxic patient. Local anesthesia, both for vaginal and abdominal deliveries, should be the anesthetic of choice. DeLee and his followers have been advocating infiltration anesthesia and have large series to support their enthusiasm for its advantages. The use of small amounts of nitrous oxid as the child is extracted will be necessary in only a small percentage of cases. In delivery from below infiltration of the perineum along the line of episiotomy incision, and blocking the nerve supply of the levators through the ischiorectal fossa, render even difficult forceps possible without the addition of general anesthesia. Next to local, spinal anesthesia can be used and has many advocates; but the simplicity of local infiltration makes its use most advantageous. Only four patients were given local and ten spinal anesthesia in this group of cases.

The incidence of eclampsia as shown in Table 1 corresponds to that reported by Williams of Baltimore. The increased incidence in the General Hospital indicated the importance that prenatal care must play in the prevention of this condition.

Castor oil, quinin, and bag induction were frequently used, but the procedure in Table 2 refers to the method finally adopted for the actual delivery of the infant.

Many patients were controlled and allowed to go for considerable time before pregnancy was terminated. Twelve deaths occurred in the seventy-nine patients that were in labor, or delivered within

TABLE 2.—*Method of Delivery*

Procedure	Antepartum		Postpartum		Total
	P*	M*	P	M	
Spontaneous	49	24	18	20	111
Bag induction	3	8	0	0	11
Forceps	30	2	4	2	38
Breech extraction	2	4	0	0	6
Version	1	1	1	..	3
Accouchement force	4	2	0	0	6
Low cervical	14	3	3	0	20
Classical	19	2	4	0	25
Porro	1	0	0	0	1
Vaginal section	1	0	0	0	1
Postmortem section	1	0	0	0	1
Undelivered	1	1	..	..	2

*P=Primigravida.
*M=Multipara.

TABLE 3.—*Duration of Hospital Treatment of Antepartum Cases*

	Para*	M	Total	Deaths
0-6 hours inclusive	25	6	31	2
6-24 hours inclusive	33	15	48	10
24-48 hours inclusive	22	4	26	1
2-3 days inclusive	14	6	20	3
More than 3 days	30	15	45	3

Para*=Primigravida.
M=Multipara.

twenty-four hours of admission. In ninety-one, in which hospitalization was longer than twenty-four hours, seven deaths occurred. One of these was carried one month, others five and eight days respectively. However, several patients carried for the same length of time and in some instances longer, delivered spontaneously and without fatality. It is of interest to note that the private antepartum cases were treated for an average of forty-seven hours, while the General Hospital cases were observed for eighty-two hours before delivery was accomplished or occurred.

MORTALITY

The mortality has been divided into three groups, namely, the spontaneous deliveries, cesarean sections, and the vaginal operations. Under the latter group we have bag induction, forceps, breech extractions, versions, accouchement force, and one vaginal section. There was one postmortem cesarean moribund on admission. Two cases died undelivered; both in extremes when admitted. These three cases are not considered further in this discussion except to include them in the twenty-five deaths.

In Table 4 we note a mortality of 5.4 per cent in the spontaneous group and 12.6 per cent in the abdominal section cases. If we consider only the antepartum cases where the indication for termination was eclampsia, we have a mortality of 5.4, 12.8, and 17.8 per cent in the three groups, respectively. It also shows that in sixty-five cases where some vaginal operation was done that the mortality was equal or greater than by abdominal section. A conclusion cannot be drawn from this statement that cesarean is less dangerous, but that in this particular group of patients vaginal operations carried the highest mortality.

TABLE 4.—*Procedure and Mortality*

Number of Cases		*Spont. 111	*Abd. Sect. 46	*Vag. Op. 65
Antepartum	P	1	5	5
	M	3	0	5
Postpartum	P	1	1	0
	M	1	0	0
Total		6	6	10
Mortality per cent....		5.4%	12.60%	15.3%

*Spont.=Spontaneous.
*Abd. Sect.=Cesarean section.
*Vag. Op.=Vaginal operation.

There were fifteen primigravidae and ten multiparae that died of eclampsia, a mortality of 9.6 and 14.5 per cent, respectively. In the primigravidae the spontaneous deliveries were only 42 per cent, while in the multiparae there were 63 per cent without operative interference. With fewer operations the mortality for multiparae was higher than in the primigravidae where operative procedures were more frequent. Of the six deaths with spontaneous deliveries three had additional complications—pneumonia, coronary sclerosis, and cerebral hemorrhage, respectively. In the other three, two were postpartum; one delivered at home of twins had two convulsions before admission and six after, dying twenty-six hours postpartum. The other, a fulminating toxemia, was in extremes on admission. The sixth case was in the hospital seven hours before delivery, having had twenty convulsions before admission in deep coma. She had had no prenatal care, and was considered moribund on entrance to the hospital.

In the abdominal section group all deaths were in primigravidae. Lung abscess, cerebral hemorrhage and accidental hemorrhage, in addition to eclampsia, account for three deaths occurring in three antepartum cases. The fourth patient was operated while she had pulmonary edema and was in coma, and another observed five days was sectioned, but died four hours later. A patient with a fulminating toxemia died forty-eight hours after abdominal section, having had numerous small convulsions. This case is representative of that group where, regardless of treatment, death seems certain. A postpartum hemorrhage following cesarean section caused the sixth death in this group.

TABLE 5.—*Cesarean Section in Eclampsia (Lull)*

	Cases	Mortality Per Cent
Cleveland	45	20.
Brooklyn	104	26.
Los Angeles	46	28.
Philadelphia	14	35.7
Total Cases	209	Av. 25.8%

Our cesarean section mortality is lower than Lull's collective series, as shown in Table 5.

In the ten patients having vaginal operations who died, four were due to postpartum hemorrhage, three from cervical lacerations, and one from the placental site. Two were in shock on admission; type of delivery may or may not have been the causative factor. Two others had almost complete anuria. Persistent coma in another, and possible acute alcoholism in addition to eclampsia explains the tenth death. Mortality should not be corrected, but statistics seem to indicate that when delivery is imperative even in the hands of the average physician, the safer procedure is not always vaginal delivery.

In classifying eclampsia Eden designates as severe any case in which two or more of the following symptoms are present: (1) prolonged

coma; (2) pulse rate above 120; (3) temperature 103 degrees Fahrenheit or higher; (4) blood pressure above 200 millimeters; (5) more than ten fits; (6) 10 grams or more of albumin in the urine; (7) the absence of edema. In this series sixty-seven were classified as severe, while 158 were mild cases. The mortality of the mild cases was 5 per cent and 40 per cent for the severe type.

CONCLUSIONS

1. All eclamptics may be treated conservatively for a period of time, depending on their reaction to treatment. Delay in patients not responding invites disaster.

2. The duration of conservative management should not be so long that termination of pregnancy must be done on poor surgical risks.

3. The type of procedure depends on parity of the patient and the condition of the cervix. Forcible delivery through the natural passages will carry an alarming mortality and even greater than cesarean section.

4. Termination of pregnancy in toxic patients should be done under local anesthesia, and this is undoubtedly the greatest advance in the treatment of this condition in recent years.

5. Period of gestation should not influence the decision of when to end the pregnancy, once convulsions have occurred and have been controlled.

6. A patient with eclampsia has two conditions to treat, a toxemia and pregnancy.*

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DISCUSSION

ALICE F. MAXWELL, M. D. (University of California Hospital, San Francisco). — The problem of eclampsia remains a vital and elusive subject in spite of many years of intensive and extensive investigations. Numerous theories have been advanced to explain the syndrome, but the underlying factor or inciting mechanism which precipitates the disturbance is an unsettled, yet basic consideration. The treatment of eclampsia must of necessity be empirical until such time as the knowledge of its etiology will permit the application of preventive or curative measures, which would invariably maintain or restore the normal balance of the pregnant woman.

Recent advances in the field of endocrinology, and particularly the rôle of the hypophysis in body functions have served to redirect attention to the possibilities of dysfunction of the pituitary as a vital factor in the problem. The isolation of pressor and antidiuretic substances in the blood of women with a pregnancy toxemia, the identification of these substances with those derived from the posterior lobe of the pituitary, the absence of these secretions from the blood of normal pregnant and nonpregnant individuals open up a promising lead in a field practically unexplored. The improved recognition of the function of minerals in the body, and the alteration of Ca balance in eclamptics, suggest further promising lines of investigation.

Experience has established the importance of prenatal supervision as a valuable prophylactic measure. The author has emphasized the fact that there is no uniform standardized method of treating women with eclampsia; each patient presents an individual problem. Therapeutic measures must be based upon knowledge acquired by clinical observation, and must be modified by the response of the patient to these methods. It is essential to bear in mind the direct relationship which exists between the reaction to palliative measures and the maternal prognoses, both immediate and remote. The permanent kidney damage which occurs in at least 20 per cent of eclamptics refutes the validity of unduly long-expectant treatment. When the interest of the woman demands termination of the pregnancy, the method selected must be influenced by the presence or absence of mechanical problems, parity and experience, etc. In general, radical measures for terminating pregnancy have in recent years been supplanted by conservative procedures—a policy which has served to reduce maternal mortality. Conservatism does not imply inactivity. The truly conservative obstetrician is the individual who knows how and when to be radical.

* The author wishes to thank Drs. E. M. Lazard and Lyle G. McNeile for the use of histories of patients occurring on their services at the Los Angeles County General Hospital.

STERLING N. PIERCE, M. D. (1930 Wilshire Boulevard, Los Angeles).—The author's review of the subject-matter helps to throw light on the present status of treatment and the results obtained in eclampsia. I feel that we should all read with particular interest the conclusions he has drawn; conclusions which are indeed logical. We should focus our attention especially on two of his conclusions: first, that in cases of eclampsia where pregnancy must be terminated, the mortality rate is considerably lower where abdominal section is done than in vaginal procedures; secondly, his remarks regarding local anesthesia are deserving of a great deal of attention. These and all of his conclusions are backed with sound reasoning, and based on statistics gathered from 225 cases of eclampsia out of 22,493 deliveries.

E. M. LAZARD, M. D. (1930 Wilshire Boulevard, Los Angeles).—The author's statistical analysis of the results of the termination of pregnancy in eclampsia, serves to emphasize conclusions which now seem to be pretty well established, viz., first, that efficient prenatal care is of the utmost importance in reducing the incidence of eclampsia; second, that in a disease so protean in its etiology and pathology, no fixed routine can be successfully employed, and that the time to terminate pregnancy in the preëclamptic toxemias is a matter of ripened clinical judgment.

The factors mentioned as indicative of satisfactory progress in the medical treatment of the toxemia can be accepted as safe guides in continuing conservative therapy. I would like to add the suggestion, that while the patient is under conservative treatment every effort should be made to establish the exciting cause of the toxemic attack, and if possible to eradicate it.

In the absence of satisfactory progress in the preeclamptic, when it seems necessary to terminate the pregnancy of labor, the method to be adopted should be dependent on the obstetrical conditions present.

The analysis of the mortality rates in the three groups—spontaneous deliveries, vaginal operations, and cesarean sections—shows a higher mortality rate for the vaginal operative group than for the cesarean section group. This, I believe, gives an incorrect idea unless the vaginal operative group be further analyzed with especial reference to the condition of the cervix. Statistics show that the now practically obsolete accouchement force in these highly toxic patients gave the highest mortality rate. To include with these operations properly indicated forceps operations or version and extraction after complete dilatation of the os, gives too unfavorable an idea of these latter procedures.

That cesarean section has a definite place in the treatment of these cases, there is no doubt, but its place must be decided by obstetrical indications rather than as a treatment of the toxemia itself. This analysis also shows that it is usually possible to treat the active eclamptic successfully without resorting to operative procedures until the active eclampsia is controlled, unless the patient be in active labor and presents some urgent obstetrical indication for interference.